

Name: _____

Date: _____

Exam: Function Reflections (Practice version 39)

1. Let function f be defined by the polynomial below:

$$f(x) = 4x^4 + 3x^3 + 6x^2 - 5x + 2$$

Draw lines that match each function reflection with its polynomial:

Reflections

Polynomials

$-f(x)$ •

• $-4x^4 + 3x^3 - 6x^2 - 5x - 2$

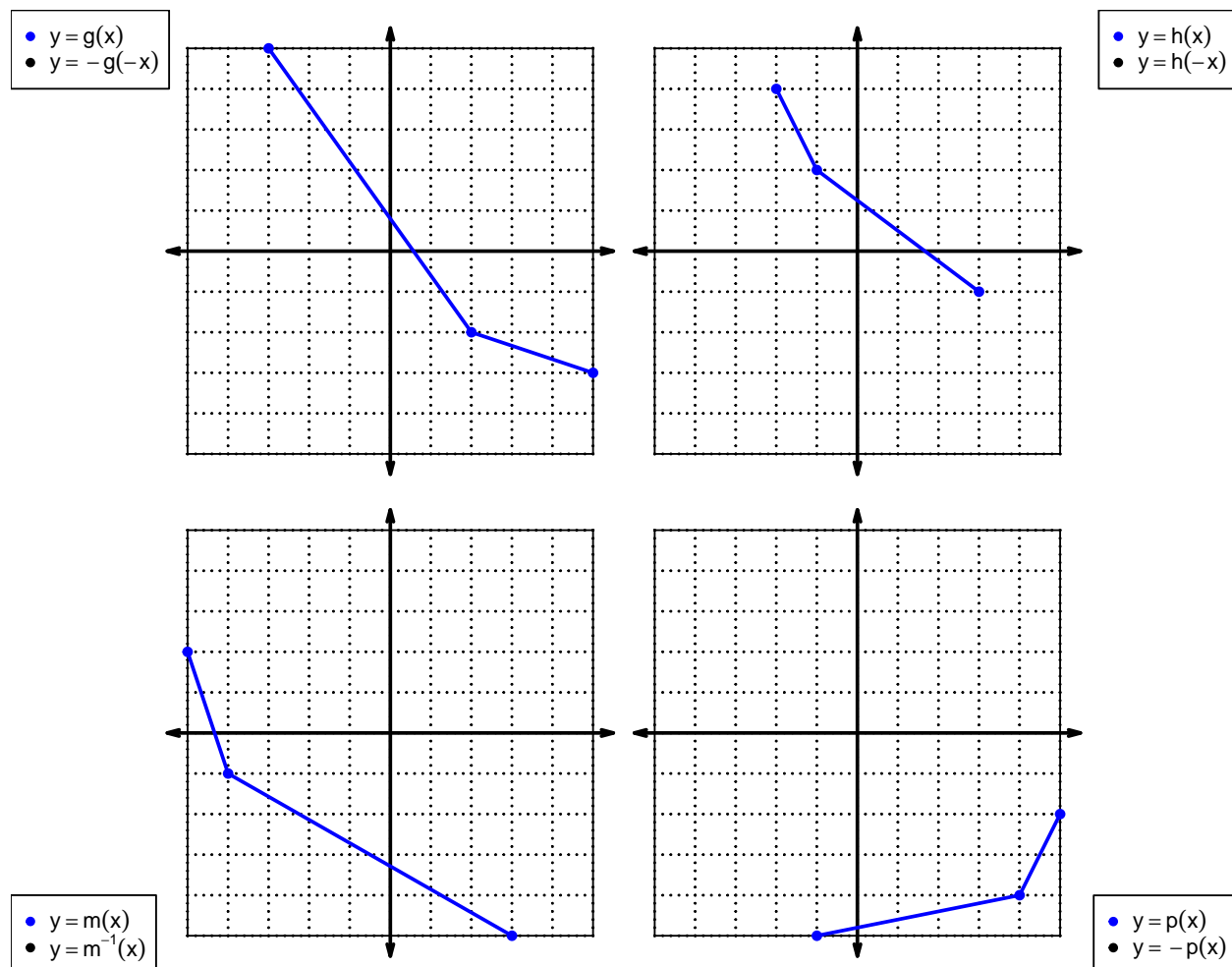
$-f(-x)$ •

• $-4x^4 - 3x^3 - 6x^2 + 5x - 2$

$f(-x)$ •

• $4x^4 - 3x^3 + 6x^2 + 5x + 2$

2. In each xy plane shown below, a function is graphed with blue. Draw the indicated reflections (as a second curve, indicated in legend) with black (or with whatever you have). The x axis is horizontal and the y axis is vertical (as typical), and the scale is equal on both axes.



Exam: Function Reflections (Practice version 39)

For all questions on this page, the functions f , g , and h are defined by the table below.

x	$f(x)$	$g(x)$	$h(x)$
1	2	8	3
2	6	7	8
3	3	4	9
4	8	1	7
5	4	2	6
6	1	9	1
7	5	6	2
8	9	3	5
9	7	5	4

3. Evaluate $h(5)$.

4. Evaluate $f^{-1}(2)$.

5. By filling more rows of the table, it is possible to make function h **odd**. If that were done, what would be the value of $h(-4)$?

6. By filling more rows of the table, it is possible to make function g **even**. If that were done, what would be the value of $g(-9)$?

Exam: Function Reflections (Practice version 39)

7. A function, f , is **even** if $f(x) = f(-x)$ for all x in the domain. A function, g , is **odd** if $g(x) = -g(-x)$ for all x in the domain.

Let polynomial p be defined with the following equation:

$$p(x) = -x^3 + x$$

- a. Express $p(-x)$ as a polynomial in standard form.

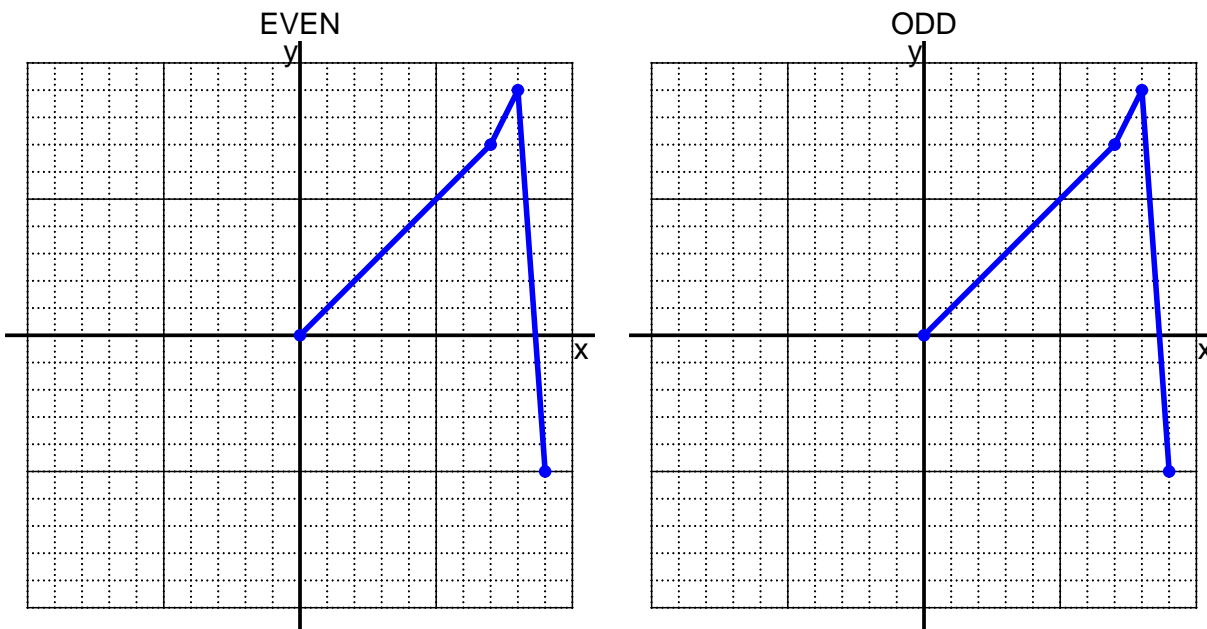
- b. Express $-p(-x)$ as a polynomial in standard form.

- c. Is polynomial p even, odd, or neither?

- d. Explain how you know the answer to part c.

Exam: Function Reflections (Practice version 39)

8. I have drawn half of a function. Draw the other half to make it even or odd.



9. Let function f be defined with the equation below.

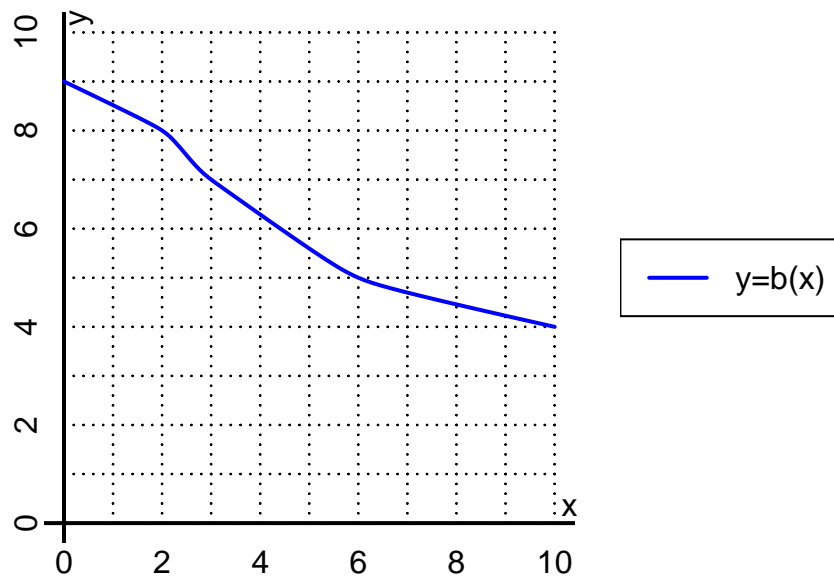
$$f(x) = 8x - 6$$

a. Evaluate $f(5)$.

b. Evaluate $f^{-1}(18)$.

Exam: Function Reflections (Practice version 39)

10. The function b is represented by the curve $y = b(x)$ graphed below.



a. Evaluate $b(6)$.

b. Evaluate $b^{-1}(8)$.

Exam: Function Reflections (Practice version 39)

11. Function f is defined by the table below.

a. Complete the columns for $-f(x)$ and $f(-x)$ and $-f(-x)$.

x	$f(x)$	$-f(x)$	$f(-x)$	$-f(-x)$
-2	-8			
-1	-3			
0	0			
1	-3			
2	8			

b. Is function f even, odd, or neither?

c. How do you know the answer to part b?